

ABSTRACT

A lithium tantalate substrate obtained by working in the state of a substrate, a lithium tantalate crystal grown by the Czochralski method is buried in a mixed powder of Al and  $\text{Al}_2\text{O}_3$ , followed by heat treatment carried out at a temperature kept to from 350 to 600°C, to manufacture a lithium tantalate substrate having volume resistivity which has been controlled within the range of from  $10^{10}$  to  $10^{13} \Omega\text{cm}$ .  
10 The substrate obtained has a very low pyroelectricity or no pyroelectricity, and it can be made colored and opaque from a colorless and transparent state and also sufficiently has the properties required as a piezoelectric material.